

## Shuvo Roy, PhD

Professor  
Department of Bioengineering and  
Therapeutic Sciences  
The University of California  
San Francisco



### **Building An Implantable Artificial Kidney**

**Abstract:** The Kidney Project is a national research project with a goal to create a small, surgically implanted, and free-standing bioartificial organ to perform the vast majority of the filtration, balancing, and other biological functions of the natural kidney. The two-part device leverages recent developments in silicon nanotechnology, membrane filtration, and tissue engineering. The artificial kidney is powered by the body's own blood pressure, without the need for external tubes and tethers or immunosuppressant drugs. This talk will describe the technical foundations for the design of device and current status of development in preclinical testing.